

Tenosynovial Giant Cell Tumor Arising on the Scapular Region

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Key Words

Giant cell tumor · Trunk · Scapula

Abstract

Tenosynovial giant cell tumor (TSGCT) is a benign soft tissue tumor arising from the synovial membrane that composes the lining of joints, tendons and bursae. TSGCT is a common tumor occurring in the hands and fingers, and also consecutively in the knees, ankles, feet and hips. It is rarely found in the scapular region. To the best of our knowledge, only 2 cases arising on the upper back have been reported. This report presents the case of a 44-year-old Japanese female with a TSGCT arising on her right scapular region.

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Introduction

Tenosynovial giant cell tumor (TSGCT) is one of the most common soft tissue tumors that tend to develop in the fingers and hands [1]. However, only rare cases of TSGCT on the trunk have been reported [2–4]. Moreover, there have been no previously reported cases arising on the inferior scapular bursa. In this report, we present a patient with TSGCT arising on the right scapular region.

Case Report

A 44-year-old Japanese female noticed a mass on her right upper back that had slowly enlarged over a 3-month period. The patient had no memory of any injury or overuse of the site. A clinical examination revealed a 35 × 30-mm dome-shaped mass with a normal skin

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color on the surface, located on the right scapular region. The mass was well confined, smooth, elastic-firm, not adherent to the overlying skin and was held in place by the basement structures (fig. 1). Range of motion was normal in the shoulder joint. Magnetic resonance imaging (MRI) depicted a circumscribed mass measuring 20 × 8 mm between the right inferior scapular angle and the rib. The signal of the lesion demonstrated almost heterogeneous isointensity to the muscles on T1-weighted images (fig. 2a), while part of the mass showed high intensity on T2-weighted images (fig. 2b). Complete excision was performed under general anesthesia. A well-demarcated tumor was found that looked like it had arisen from the right inferior scapular angle (fig. 3).

The histological examination revealed a well-encapsulated tumor (fig. 4a), which contained histiocytes with abundant eosinophilic cytoplasm, fibroblasts with fusiform-shaped nuclei, collagen hyperplasia (fig. 4b), multinucleated osteoclast-like giant cells (fig. 4c) and foam cells (fig. 4d). An immunohistochemical investigation of the tumor cells demonstrated diffuse expression of CD68 and focal areas of desmin positivity. The staining for CD34 and αSMA was negative. These findings were consistent with those of TSGCT.

Discussion

TSGCT is synonymous with a giant cell tumor of the tendon sheath, fibrous xanthoma of the synovium, benign synovitis and nodular synovioma [1]. It is a benign soft tissue tumor arising from the synovial membrane that composes the lining of joints, tendons and bursae [1]. TSGCT is characterized by a discrete proliferation of rounded synovial-like cells, accompanied by a variable number of multinucleated giant cells, inflammatory cells, siderophages and xanthoma cells [1]. TSGCT can appear at any age, but is most common in patients between 30 and 50 years of age, with a 2:1 female predominance. TSGCT was first reported in 1852 by Chassaignac, who described a nodule arising in a flexor tendon sheath of the finger as a cancer of the tendon sheath [1, 5]. The nature and cause of TSGCT were unclear. It had been considered to be an inflammatory process occurring as a consequence of chronic antigenic stimulation [6, 7]. Recent studies have demonstrated cytogenetic abnormalities in the form of trisomy 7 and autonomous growth, in addition to clinical features of local recurrence and even a few case reports of metastatic TSGCT, which raised the possibility that TSGCT can sometimes be neoplastic [1, 7, 8].

Jaffe et al. [9] reviewed a TSGCT family and indicated that the synovium of the tendon sheath, bursa and joint were an anatomic unit that could give rise to a common family of lesions, such as xanthomas, giant cell tumors, xanthomatous giant cell tumors and myeloplaxoma of the tendon sheath. These tumors are differentiated by their shape and anatomical location. TSGCT occurs predominantly in the hands, where it probably represents the most common neoplasm. The most common sites in the hands are the fingers. Other sites include the joints of the legs such as the ankle, foot, knee, wrist, elbow, hip and rarely the trunk [1, 7]. Kransdorf [3] surveyed 18,677 benign soft tissue tumors and reported that TSGCT was present in 731 cases, and that most of these cases occurred in the hands, wrists, feet and ankles; only 4 cases occurred in trunk. In 1995, Thaxton et al. [2] described a case where TSGCT originated in the seventh posterior intercostal space. Krishnamoorthy et al. [4] reported the case of a male patient with TSGCT of the supraspinatus tendon sheath, which was the cause of impingement of the shoulder.

In our case, the lesion was ascribed to developing from the inferior scapular bursa, as suggested by Williams et al. [10], which sometimes existed as a bursa between the superior latissimus fibers and the inferior angle of the scapula. As the tumor was derived not from the

tendon sheath but from the bursa in our present case, we consider that the term ‘tenosynovial giant cell tumor’ is preferable to giant cell tumor of the tendon sheath in this report. We believe that this report is the first documented case of TSGCT arising on the inferior scapular bursa.

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Fig. 1. The 35 × 30-mm dome-shaped mass with a normal skin color on the surface, located on the right scapular region.

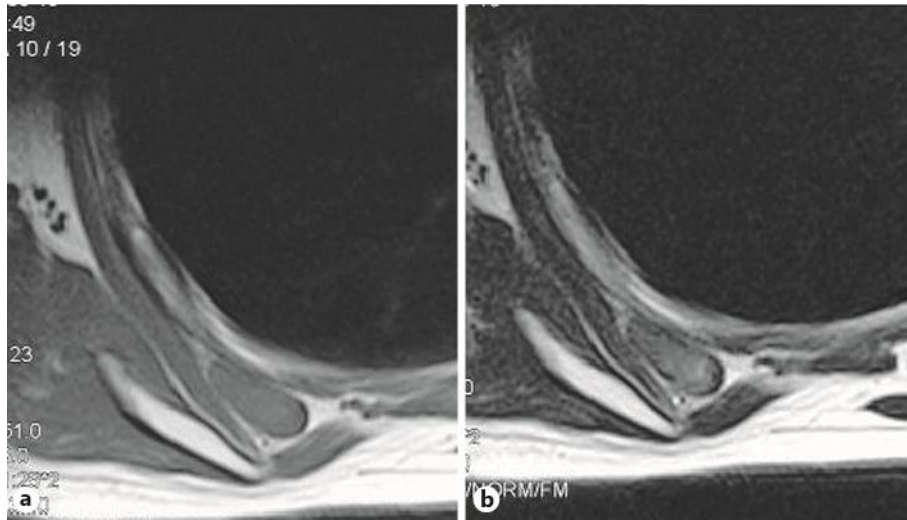


Fig. 2. **a** MRI shows a circumscribed mass measuring 20×8 mm, between the right inferior scapular angle and the rib. The signal of the lesion demonstrated almost heterogeneous isointensity to the muscles on T1-weighted images. **b** Part of the mass shows high intensity on T2-weighted images.



Fig. 3. A well-demarcated yellowish tumor can be seen.

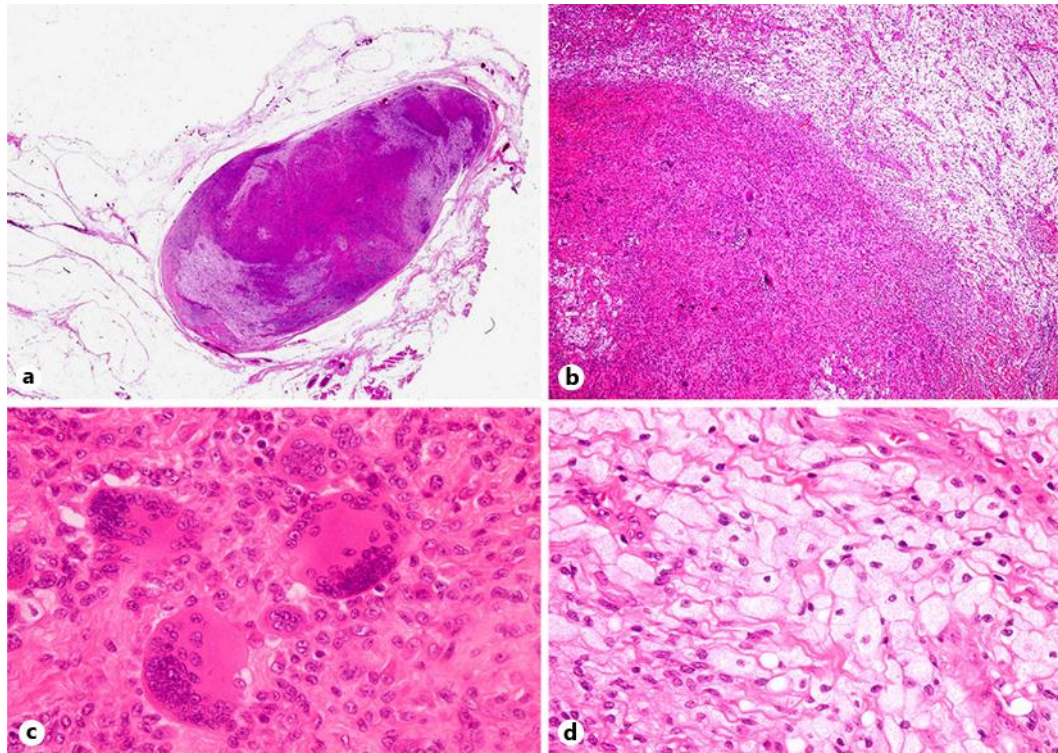


Fig. 4. **a** Low magnification of an H&E-stained specimen shows a well-encapsulated tumor. H&E. $\times 1$. **b** The tumor contained histiocytes with abundant eosinophilic cytoplasm, fibroblasts with fusiform-shaped nuclei and collagen hyperplasia. H&E. $\times 20$. **c** Many multinucleated osteoclast-like giant cells can be seen in the tumor. H&E. $\times 40$. **d** The proliferation of foam cells can be observed in the tumor. H&E. $\times 40$.